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# RAILROADING

## on the BOSTON AND MAINE



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# WHAT RAILROADS MEAN TO YOU



**A**merica's railroads are the backbone of our country's transportation system. They link together communities, states, and regions with thousands of miles of track. The railroads carry more freight more miles than all other forms of transportation together, and carry it safely, quickly and economically from its point of origin to its destination. They are the only true common carrier.

The railroads operate without subsidy. They pay their own way. They pay taxes, too — huge taxes that help build schools and hospitals, help pay for public improvements — that benefit communities, states and the nation alike.

The railroads are privately owned and privately operated. They are an outstanding example of private enterprise, operating in a free democracy, to perform a vital public service.

# RAILROADING ON THE BOSTON AND MAINE

The Boston and Maine Railroad began with 178 separate corporations, the oldest of which was granted a charter by King George III of England in 1772. One by one these were joined together into the system which is now the Boston and Maine.

The first of these individual companies to actually build and operate a railroad was the Boston and Lowell Railroad, which was 25 miles long and which opened for business in 1835.

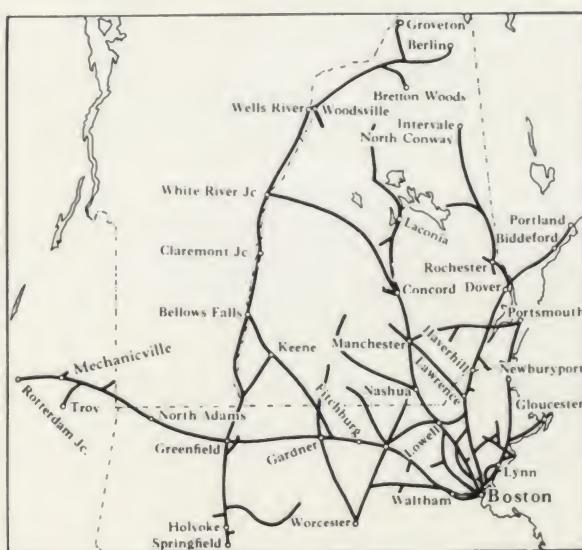
Throughout its long history the Boston and Maine has been a pioneer in the field of transportation. It established the first railroad-owned bus line (1924); the first railroad-owned auxiliary truck line (1925); and the first railroad-owned airline (1931).

It was among the first railroads in the country to use diesel electric power in passenger service, and was among the first to make use of a streamlined, light-weight, articulated passenger train (1935). In the use of centralized traffic control the Boston and Maine also has been a pioneer, and is regarded as one of the best signalled railroads in the country.

Currently the Boston and Maine is engaged in a new pioneering effort, making use of a large fleet of Budd rail diesel cars in its commutation service.

Today, the Boston and Maine Railroad serves the states of Massachusetts, New York, Vermont, New Hampshire and Maine. It operates 1,575 miles of road of which 535 are double track, with total miles of track operated 3,044. The road provides passenger and freight rail service for industrialized areas, rural areas and five Atlantic ports: Boston, Salem and Beverly, Mass.; Portsmouth, N. H.; and Portland, Me. Its main lines fan out from Boston in three general directions, easterly to Portland, Me.; northerly to White River Junction and Wells River, Vt.; and westerly to Troy and Rotterdam Jct., N. Y.; with intermediate connecting cross lines between Worcester, Mass., and Portland, Me.; Springfield, Mass., and Wells River, Vt.; and many branch lines. The principal gateways and interchange points are:—Rotterdam Jct., N. Y., with the New York Central; Mechanicville, N. Y., with the Delaware & Hudson; Springfield and Worcester, Mass., with the New York, New Haven and Hartford; White River Jct., Vt., with the Central Vermont (Canadian National); Wells River, Vt., with the Canadian Pacific; Bellows Falls, Vt., with the Rutland; and Portland, Me., with the Maine Central and the Grand Trunk

(Canadian National).



### RAIL LINES OF THE BOSTON AND MAINE RAILROAD

# POWER

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**P**ower is the heart and life of a railroad. And here in Northern New England, modern power is essential, because some of the territory served by the Boston and Maine is rugged and mountainous — and all of it is subject to heavy snowfall.

In general, a railroad needs three types of motive power; passenger, freight and switching. Then again, passenger power is divided into two general types — heavy for long-haul main line trains and lighter power for local trains. Freight, similarly, needs heavy power for long through trains and lighter power for the smaller locals and yard switching.

All our through freight and passenger trains are handled by diesels, with a maximum speed in passenger service of 70 miles per hour and in freight service of 45 miles per hour.

Until recent years steam was the mightiest and most practical kind of railroad motive power—but on most American railroads today steam is on the wane.



AN OLD SOLDIER FADES AWAY

4113-4117 — Class R-1D — 4-8-2 and Tender  
Total Weight 814,800 lbs.  
Heavy Passenger and Freight service

# DIESEL



4200-4223  
Main Line Freight  
233 Tons 96'6" long  
2700 Horse Power (2 Units)  
65 M.P.H. Maximum Speed

4250-4264  
Main Line Freight  
116 Tons 50'8" long  
1350 Horse Power  
65 M.P.H. Maximum Speed

4224-4228, 4265-4268  
Main Line Freight and  
Passenger  
244 Tons 100'9" long  
3000 Horse Power (2 Units)  
65 M.P.H. Maximum Speed

Boston and Maine Four Unit Freight Diesel having a total of 5400 horse power.  
This unit is used for heavy and long distance freight.

The largest single item in the expenditures of American railroads on plant and equipment since World War II has been in the rapid conversion from coal-burning steam locomotives to oil-burning diesel-electrics.

This has come about because a half-century ago a German named Rudolf Diesel invented a new type of internal-combustion engine. The diesel, brought to its present state of development is very powerful, extremely reliable, and comparatively economical to operate. In fact, unbelievable though it may seem, a modern diesel-electric locomotive can haul one ton, one mile, on one teaspoonful of fuel oil!

In the modern diesel locomotive the diesel engine operates an electric generator, through which electric power is supplied to the traction motors mounted on the trucks of the locomotive. This arrangement gives complete flexibility and has the great advantage of providing continuous "torque" instead of a succession of power impulses. That's one reason why diesels can pull heavier trains than steam locomotives can — and also can start trains more smoothly, which saves wear and tear on the couplers.

The Boston and Maine was among the first railroads in America to use diesel power and will be completely dieselized in 1955.

# DIESEL



3800-3820  
Main Line Passenger Service  
161 Tons 71 feet long  
2000 Horse Power  
85 M.P.H. Maximum Speed

3821  
Main Line Passenger Service  
164 Tons 70 feet long  
2250 Horse Power  
85 M.P.H. Maximum speed



1555-1577  
Local Passenger, Freight and  
Helper Service  
123 tons 55' 11" long  
1500 Horse Power  
65 M.P.H. Maximum speed



1550-1553  
Local Passenger and Freight  
113 tons 57'10" long  
1500 Horse Power  
65 M.P.H. Maximum speed



1500-1519; 1530-1545  
Local Passenger, Freight and  
Helper Service  
125 Tons 56' long  
1500-1600 Horse Power  
65 M.P.H. Maximum speed

# DIESEL

800-807; 860-865  
Yard Switching and Local  
Freight  
124 Tons 44'5" long  
800 Horse Power  
60 M.P.H. Maximum speed



1220-1231  
Local Freight Service  
124 Tons 44'5" long  
1200 Horse Power  
60 M.P.H. Maximum speed

1200-1213; 1260-1273  
Heavy Road Switching and Local  
Freight  
124 tons 44'5" long  
1000 Horse Power  
60 M.P.H. Maximum speed

1162-1188  
Yard Switching and Light Local  
Freight  
99 tons 44'5" long  
660 Horse Power  
60 M.P.H. Maximum speed



110-119  
Yard Switching and Short Local  
Freight  
44 tons 35'5" long  
380 Horse Power  
35 M.P.H. Maximum speed



# PASSENGER



The "KENNEBEC", eastbound at Scarboro, Maine

**C**omfort, convenience, reliability and economy are the four big things a railroad offers to travelers. And even today, no other form of transportation can offer all four in the same degree that the railroads do.

It's a far cry from the old to the new in passenger cars. The first coaches, luxurious though they were in their time, had no such comforts, convenience and privacy as today's modern cars. The new, streamlined day coaches, with their adjustable seats, sound-proof construction and year-round air-conditioning, offer luxury and relaxation unheard of even a few years ago and we consider our new coaches the finest in the country.

Dining cars, too, have been vastly improved — not only in design but in quality of service. Truly, the railroads offer more for your travel dollar than ever in history.



Interior of a Boston and Maine Restaurant Lounge Car

# PASSENGER

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Budd "Highliners" at Boston Terminal

In 1955 the Boston and Maine became the world's largest user of Budd rail diesel cars, having recently purchased 55 such cars to add to its previous total of nine. Most of these 64 cars, called Budd Highliners on the Boston and Maine, will be used in commutation passenger service in the Boston area.

The Budd cars are stainless steel, air conditioned, self propelled diesel cars and they provide the last word in modern passenger transportation. The Boston and Maine fleet of Budds will consist of three types, 49 RDC-1s or coaches; 12 RDC-2s or combination coach and baggage cars; and three RDC-3s or combination coach and mail cars. The RDC-1 or full coach car seats 89 passengers; the RDC-2 or coach-baggage combine, 71 passengers; and the RDC-3, coach-mail-baggage car, 49 passengers.



Interior of Budd "Highliner"



70-71  
Stainless Steel Restaurant-Lounge Car  
Length: 85 feet, 7 inches  
Seating Capacity: 24 in diner, 18 in lounge



4800-4807  
Stainless Steel Coach  
Length: 85 feet, 7 inches  
Seating Capacity: 56 in main car, 10 in smoker



3800-3801  
Stainless Steel Baggage Combine  
Length: 85 feet, 7 inches  
Seating Capacity: 36 in main car, 8 in smoker

# PASSENGER

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One of the first light-weight, self articulated trains in America.

6000

Passenger capacity 132

600 Horse Power Diesel-electric articulated—three units



6100-6148; 6200-6211;  
6300-6302  
Budd 'Highliner' RDC-1  
Passenger capacity 89  
Two 275 Horse Power Diesel  
Engines  
85 M.P.H. Maximum speed

31-32-33-34  
Stainless Steel Sleeping Car  
Length: 85' 6"  
Capacity: 4 bedrooms, 6 roomettes,  
6 sections



# PASSENGER



4585-4614  
Air-Conditioned Coach  
Length: 84 feet, 7 1/4 inches  
Seating Capacity: 84



3600-3696  
Passenger and Baggage Combine  
Length: 82 feet  
Seating Capacity: 44 to 56



1200-1300  
Commuter Coach  
Length: 78 feet, 9 inches  
Seating Capacity: 72 to 98



Milk Car  
Length: 44 feet, 3 inches  
Capacity: 8,000 gallons  
This milk car is not a  
passenger carrying car  
but is listed as passenger  
equipment.

# FREIGHT

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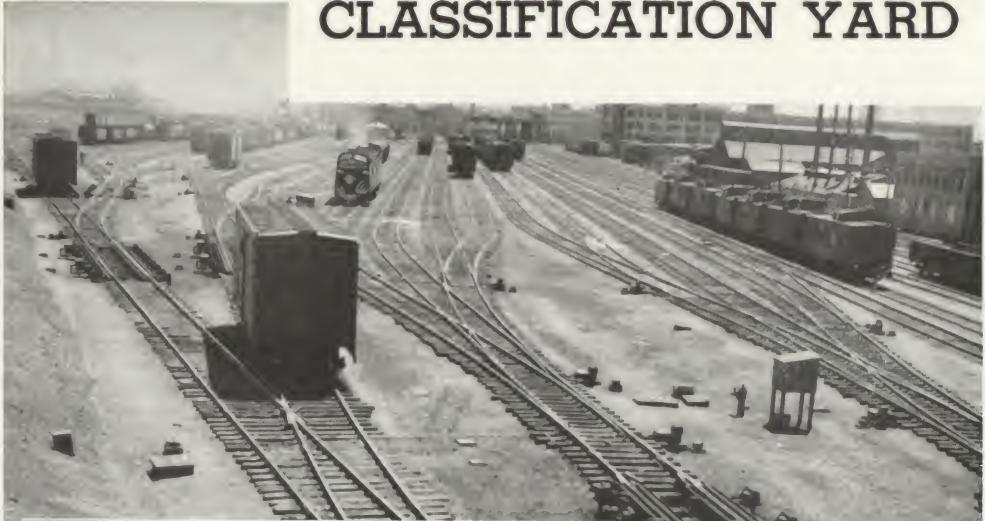
Westbound Four Unit Freight Rounding Zoar Curve, Zoar, Mass.

**F**reight, though less spectacular than the streamlined stainless steel, high speed passenger "limited", is the vital service to industry and commerce. The B and M handles in a year about 750,000 *loaded* freight cars — not counting empties.

To handle the more than 200 types or classes of freight, the railroads have developed many different kinds of freight cars. The list goes from the familiar box car and gondola to specialized cars of many types, including pulpwood flat cars, bulk sugar and flour hoppers, and big gear carrying cars.

Every freight car bears its own identifying number, and through a complicated but efficient system of co-operative "book-keeping", every major railroad in the United States knows always just where all its cars are and where they're heading for. In the case of the B and M, this means keeping track of a total of 4,639 cars, most of them scattered all over the country!

# CLASSIFICATION YARD



ABOVE: Boston and Maine Classification Yards at Somerville. Here incoming freight trains are sorted into local units and outgoing freight trains are made up.

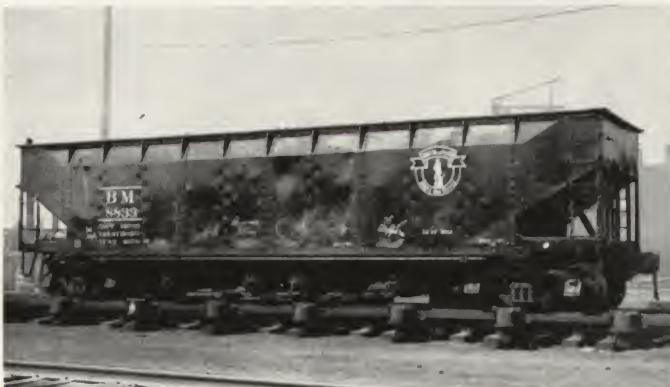
LEFT: The "hump", a man-made hill of rails, down which the cars roll and are switch-controlled to any point in the yard.



A Retarder — power operated braking mechanism controlled by operator in retarder tower capable of slowing or stopping freight cars.

# FREIGHT

Gondola Car  
Length: 41 feet  
Capacity: 1980 cubic feet, 100,000 pounds



Self-Clearing Hopper Car  
Length: 41 feet  
Capacity: 2748 cubic feet, 140,000 pounds

Box Car  
Length: 41 feet, 10 inches  
Capacity: 3881 cubic feet, 100,000 pounds

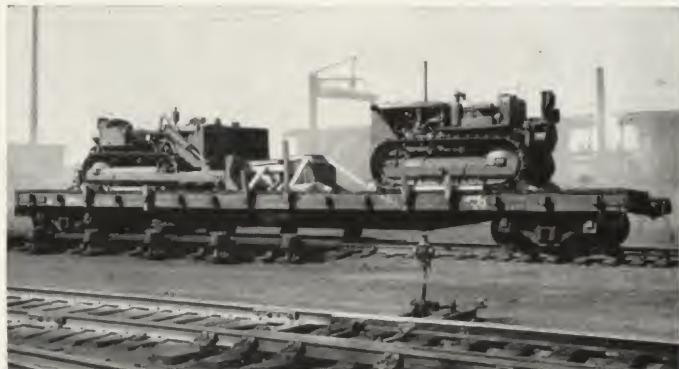


Covered Hopper Car  
Length: 32 feet, 4 inches  
Capacity: 1790 cubic feet, 140,000 pounds

# FREIGHT



Ventilator and Refrigerator Car  
Length: 42 feet, 2 inches  
Capacity: 1987 cubic feet, 90,000  
pounds  
Ice Capacity: 11,000 lbs. crushed  
ice, 10,600 lbs. coarse ice,  
10,000 lbs. chunk ice



Flat Car  
Length: 53 feet  
Capacity: 140,000 pounds



Depressed Center Flat  
Car. Length 37 feet 6  
inches. Capacity 180,000  
pounds.



Tank Car  
Length: 36 feet, 3 inches  
Capacity: 10,350 gallons

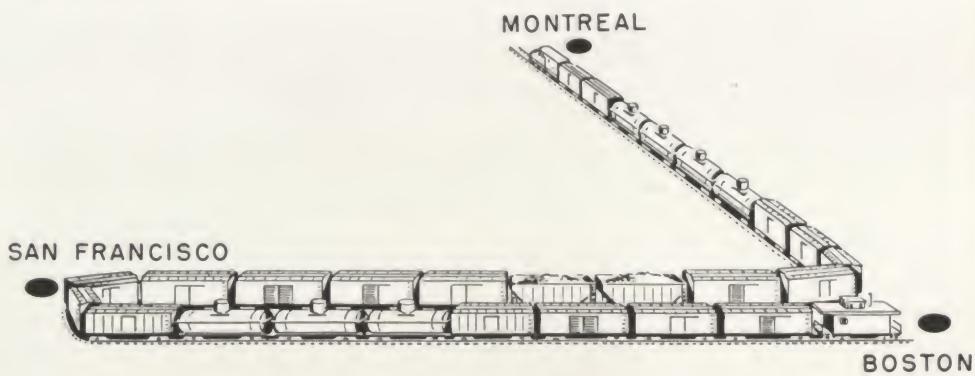
# FREIGHT

**Snow Plow**  
Length: 46 feet, 3 inches  
(This is one of several types in use on the B and M)



**Caboose**  
Length: 29 feet

IF ALL THE LOADED FREIGHT CARS THE B AND M HANDLES IN A YEAR WERE MADE UP INTO A SINGLE TRAIN, IT WOULD REACH FROM BOSTON TO SAN FRANCISCO, BACK TO BOSTON AGAIN, AND THEN NORTHWEST FROM BOSTON ACROSS THE CANADIAN BORDER, WITH THE ENGINE IN MONTREAL.





Car Washers, North Station Yards

In the foregoing pages we've described some of the rolling stock we use on the B and M. But, of course, it takes a lot more than locomotives and cars to operate a railroad.

The job requires signals, switches, crossing gates, car washers, crossties, terminal equipment, repair shops, bridges, stations, freight houses, even silverware and linen, drinking cups and many more — a virtually endless list of materials and equipment.

Above all, it takes people to run a railroad — 11,500 people in the case of the B and M. It takes conscientious, reliable, highly-trained people to run the trains and interlocking towers, to keep roadbeds in top shape, to handle freight and overhaul locomotives.

In the last analysis it's the combination of equipment and highly skilled people that carry the freight and the mail and bring your train in on time.

Each year thousands of young people are starting careers in the many interesting departments of railroading. The railroad business offers opportunities for a wide range of interests and capabilities. For railrcad people there is a deep sense of satisfaction in the realization of their great contribution to the welfare and prosperity of community and country.

# WHISTLE LANGUAGE

Whistles are just as essential in the operation of a railroad as are block signals, and other safety devices.

Each different series of toots carries its own special message of warning or instruction.

Here is the "whistle language" used by the B and M:

"—" means a long toot; "o" means a short one.

— — o o

Approaching crossing (last short toot sounds just as crossing is reached).

— — o o o

When train stops on main line, engineer instructs flagman to protect rear end of train.

— — — — —

Train ready to proceed. Engineer calls in flagman from West or South.

— — — — —

Train ready to proceed. Engineer calls in flagman from East or North.

o o o

When train is stopped, engineer is going to back. When train is running, engineer acknowledges signal from conductor to stop at next station.

— — o o o

When train is running, alarm for fire or livestock on right-of-way. Signal is given two or three times as train passes fire or livestock, and again on reaching next station or section crew.

— — — — —

Approaching junction, or mail crane where train picks up mail bag "on the fly", or for warning.

o o o o o o (succession)

Alarm for persons or livestock on the track.

# SIGNALING



Centralized Traffic Control Tower, Lowell, Mass.

The man shown above in the Centralized Traffic Control Tower, Lowell, Mass., controls the movement of all trains over the many miles of track outlined on the board before which he sits. This is done through the use of miniature levers which operate signals and switches.



## THREE LIGHT INTERLOCKING SIGNAL

Below is an outline of various signal color combinations and their meaning. G — Green, R — Red, Y — Yellow.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
G	Y	Y	Y	R	R	R	R	R	R
R	G	Y	R	R	R	G	Y	R	R
R	R	R	R	Y	R	R	R	G	Y (flashing)

1. Proceed.
2. Approach next signal at medium speed, 30 M.P.H.
3. Approach next signal at slow speed, 15 M.P.H.
4. Prepare to stop at next signal.
5. Proceed at restricted speed. (Used in switching moves)
6. Stop.
7. Proceed, medium speed within interlocking limits.
8. Proceed at medium speed, prepare to stop at next signal.
9. Proceed, slow speed within interlocking limits.
10. Proceed, prepare to stop at next signal, slow speed within interlocking limits.

# GENERAL

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One of the many Automatic Gates with red  
flasher signals in operation on B and M



60 — Speed Post



B13 — Mile Post (Boston 13 miles)



W — Whistle Post



12  
87 — Bridge and Culvert Marker



Adzing Machine Representative of Latest Type Track Laying Equipment In Use On B&M's Main Line



This platform bridge spans the open end of rectangular loading platforms at Boston Freight Terminal, providing an endless overhead conveyor system for towing freight trucks. Bridge can be raised to permit movement of freight cars inside rectangle.



1500 Horse Power Diesel Engine

# GENERAL

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Wheel Truing Machine at Boston Terminal speeds task of truing diesel locomotive and car wheels.



Modern method of tamping tracks. Matisa tamper at work.





Hoosac Pier and  
Grain Elevator.

The doors of the world's leading markets and ports are available to New England industries and Boston and Maine Railroad shippers through the railroad's completely modernized marine facilities, located on the main ship channel in the Charlestown section of Boston Harbor.

Two terminals, Hoosac Pier No. 1 and Mystic Pier No. 1, offer six deep-water berths, with direct interchange of cargo between ships and cars, and completely modern fire resistant transit sheds with more than 440,000 square feet of floor space, all under cover.

Direct rail connections at each berth provide rail service to all U. S. and Canadian points, also with an 880,000 bushel capacity grain elevator located on Hoosac Pier. Both piers are operated by the railroad's marine subsidiary, the Mystic Terminal Company.



56,000 Bags of Flour Awaiting  
Shipment in Mystic Pier Shed.  
Three Depressed Rail Tracks Run  
Through Middle of Shed.



Modern Terminal and Office Quarters of Boston & Maine Transportation Co.

The Boston and Maine Railroad has a highway subsidiary, the Boston & Maine Transportation Company, which operates 90 buses and 115 trucks, trailers and tractors in passenger and freight service throughout northern New England.

These highway services are performed both as adjuncts to rail service and as independent operations apart from rail service. Principal bus lines are between Boston and Concord, N. H., with various short lines and localized services in other parts of Maine, New Hampshire and Massachusetts. The Company's chief truck lines are between Boston and Portland, Boston and Dover, N. H., and Boston and Fitchburg, Mass., with various subordinate lines and localized services. Buses and trucks provide service in lieu of local trains, both branch and main line, while trucks furnish many stations with LCL freight service.

Headquarters of the Company are located near the Railroad's Boston Freight Terminal, in East Cambridge, in a completely modern, air conditioned building which also houses terminal and maintenance services for both buses and trucks.

## Home of the Boston and Maine



The famous North Station, home terminal of the Boston and Maine Railroad, with its adjacent hotel and office building and including the Boston Garden, home of the Bruins and Celtics. Here 230 passenger trains arrive and depart each working day, with 9 million commuters passing through its gates every year. Here it is said one could live comfortably from birth to death without having to leave its shelter and its services. This new aerial view shows how skyways have been constructed over North Station tracks and along rear and one side of general office building.

